WHAT IS CLAIMED IS:

1. A cylindrical grinding machine having a bed; a workpiece support device for rotatably supporting said workpiece about a horizontal axis on said bed; and a wheel head unit rotatably supporting a grinding wheel for grinding said workpiece and guided on said bed to be movable in a first horizontal direction parallel to said horizontal axis and in a second horizontal direction extending across said horizontal axis; said grinding machine comprising:

a coolant collecting vent opening to said bed and vertically extending right under a machining area where said grinding wheel comes into contact with said workpiece;

a horizontal vent formed in said bed in communication with the lower end portion of said coolant collecting vent and horizontally extending to open to a lateral surface of said bed; and

a coolant collecting device inserted at at least a portion thereof into said horizontal vent to present a coolant inlet portion thereof under the coolant collecting vent.

2. The cylindrical grinding machine as set forth in Claim 1, wherein said wheel head unit comprise:

a slide base guided at both ends thereof on said bed to be movable back and forward in said second horizontal direction with a mid portion thereof straddling over at least a part of said coolant collecting vent; and

a wheel head guided on said slide base to be movable in said first horizontal direction and rotatably supporting said grinding wheel.

3. The cylindrical grinding machine as set forth in Claim 1, wherein said workpiece support device comprises:

a support table provided bodied with said bed on a forward upper portion of said bed and formed with a support portion upright extending in said first direction; and

first and second support heads mounted on said support portion of said

support table at their side surfaces opposite to those facing said wheel head and arranged spaced in said first horizontal direction for rotatably supporting both ends of said workpiece, at least one of said first and second support heads being provided with drive means for rotating said workpiece;

and wherein lower portions of said first and second support heads are released from being secured to said support table.

4. The cylindrical grinding machine as set forth in Claim 1, wherein:

said coolant collecting vent passes through said bed from the upper surface to the lower surface to open to a floor surface on which said grinding machine is installed; and

said horizontal vent permits said coolant collecting device which is movable on said floor surface, to be inserted thereinto and to present said coolant inlet portion right under said coolant collecting vent.

5. The cylindrical grinding machine as set forth in Claim 1, wherein:

said coolant collecting vent takes a rectangular shape as viewed from above;

the width of said coolant collecting vent in said first horizontal direction is set so that said coolant collecting vent opens right under the both ends of the longest workpiece when the same is supported by said workpiece support device; and

the depth of said coolant collecting vent in said second horizontal direction is set so that said coolant collecting vent faces the lower surface of said slide base when said grinding wheel is advanced to a grinding position to grind said workpiece.

6. The cylindrical grinding machine as set forth in Claim 2, wherein said wheel head is provided with a pair of bearing sections at opposite sides of said grinding wheel for rotatably supporting said grinding wheel from the opposite sides thereof.

7. The cylindrical grinding machine as set forth in Claim 2, wherein:

said slide base is guided at both end portions thereof to be movable back and forth in said second horizontal direction above a grinding point at which said grinding wheel comes into contact with said workpi ce;

said whe l head is suspended from said slide base to be movable back and

forth in said first horizontal direction; and

first guide means on said bed for guiding said slide base and second guide means on said slide base for guiding said wheel head are disposed at higher positions than said grinding point.

8. A cylindrical grinding machine having a bed; a workpiece support device for rotatably supporting said workpiece about a horizontal axis on said bed; and a whe l head unit rotatably supporting a grinding wheel for grinding said workpiece and guided on said bed to be movable in a first horizontal direction parallel to said horizontal axis and in a second horizontal direction extending across said horizontal axis; wherein said bed takes as viewed from above a U-letter shape which opens at the rear end portion of said bed and defines a vent space at the central portion of said bed for use as a coolant collecting space; said grinding machine comprising:

a coolant supply device inserted into said bed from the opened rear end portion of said bed and presenting a coolant inlet portion thereof right under said vent space for collecting the coolant falling down from a machining area in which said grinding wheel grinds said workpiece; and

a slide base included in said wheel head unit and guided at both ends thereof on said bed to be movable in said second horizontal direction with a mid portion thereof straddling over said vent space.

9. The cylindrical grinding machine as set forth in Claim 1, wherein said coolant collecting device comprises:

a funnel member provided in said coolant colleting vent right under said machining area for gathering coolant falling down into said coolant colleting vent;

a discharge duct inserted into said horizontal vent from the opening formed at said lateral surface of said bed and presenting an one end opening thereof under said funnel member for feeding the coolant gathered by said funnel member outside said bed;

a mist discharge duct branching from said discharge duct right before said other end of said discharg duct and extending upward;

a mist collecting device connected to said mist discharge duct for sucking the mist from said mist discharge duct; and

airflow blocking means for permitting the coolant to go out from an outlet port provided at the other end of said discharge duct, but blocking the airflow from said outlet port toward said mist discharge duct.

10. The cylindrical grinding machine as set forth in Claim 9, wherein said airflow blocking means comprises:

means for forming a stagnant portion which is capable of enabling coolant to flow or to remain; and

a partition plate having a lower end edge extended into the coolant which is flowing or remaining in said stagnant portion, for blocking the airflow above th surface of the coolant remaining in said stagnant portion, but permitting the coolant to flow through a space below said lower end edge thereof.

11. The cylindrical grinding machine as set forth in Claim 10, wherein said means for forming said stagnant portion comprises:

a container connected to said outlet port at said other end of said discharg duct and capable of maintaining the coolant flowing thereinto from said outlet port at a predetermined level; and

wherein said partition plate is suspended from a top plate of said container with said lower end edge extending into the coolant remaining within said container for partitioning a space at the side of said outlet port of said container to be blocked from the atmosphere.

12. The cylindrical grinding machine as set forth in Claim 11, wherein said coolant collecting device further comprises:

a chip separation device provided with magnetic-type separation device for separating grinding chips from the coolant flowing into said container; and

a coolant reservoir for receiving overflow coolant discharged from said container so that said container maintains the coolant flowing therein at said pr d termined l vel.

13. The cylindrical grinding machine as set forth in Claim 9, wherein said airflow blocking means comprises:

a partition plate suspended from a top plate of said discharge duct between a branch point where said mist discharge duct branches from said discharge duct and said outlet port and extending a lower end portion thereof blow the surface of the coolant flowing in said discharge duct for blocking the airflow through a space above the surface of the coolant.

14. The cylindrical grinding machine as set forth in Claim 9, further comprising:

cover means for covering four lateral surfaces and a top surface of said machining area.